DePuy Synthes
POWER TOOLS
COMPANIES OF Johnson & Johnson

UNIVERSAL BATTERY CHARGER II

USER'S MANUAL

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INTRODUCTION
General Information

Intended use
The Universal Battery Charger II (05.001.204), referred to henceforth as the charger or device, allows the following *DePuy Synthes Power Tools* batteries to be automatically charged and manually checked:

System	Handpieces	Battery/Power Module
Battery Power Line	530.605 530.610 530.615	530.620 (14.4 V, NiMH)
Battery Power Line II	530.705 530.710 530.715	530.630 (14.8 V, Li-Ion)
Trauma Recon System	05.001.201 05.001.240	05.001.202 (25.2 V, Li-Ion)
Small Battery Drive	532.010	532.003 (12 V, NiCd) 532.033 (14.4 V, NiCd)
Small Battery Drive II	532.110	532.103 (14.4 V, Li-Ion)

If required, Battery Power Line battery (530.620) and Small Battery Drive batteries (532.003, 532.033) can also be refreshed with the charger (see page 8).

Compatibility
The Small Battery Drive batteries (532.003, 532.033) can be used with Small Battery Drive II handpiece (532.110).

The Small Battery Drive II battery (532.103) can be used with the Small Battery Drive handpiece (532.010).

The Battery Power Line battery (530.620) can be used with the Battery Power Line II handpieces (530.705, 530.710, 530.715).

The Battery Power Line II battery (530.630) can be used with the Battery Power Line handpieces (530.605, 530.610, 530.615).

Precaution: The battery for the Power Drive (530.200) cannot be charged with the UBC II. Please use the UBC item number 530.601.

Abbreviations
Please note the below mentioned items are abbreviated throughout the document as follows:

Items	Abbreviation
Small Battery Drive	SBD
Small Battery Drive II	SBD II
Power Module for Trauma Recon System	Power Module
Universal Battery Charger II	UBC II

Safety precautions
The device may only be used with the supplied power cord.

The device may only be operated on an even, dry surface that is sufficiently strong to hold its weight.

Avoid contact with fluids.

The device is designed to be operated and stored in closed rooms. Ensure that the device is not operated in the direct vicinity of radiators or other heat emitting devices (please refer to page 23 for details on environmental conditions).

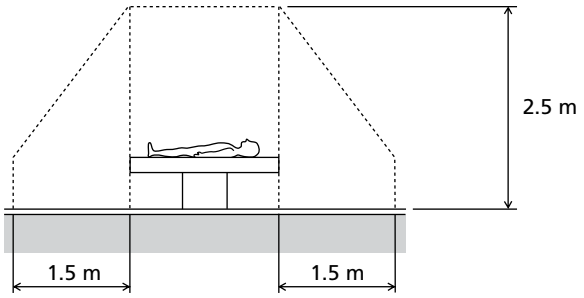
Please observe the information on the electromagnetic compatibility, see page 25.

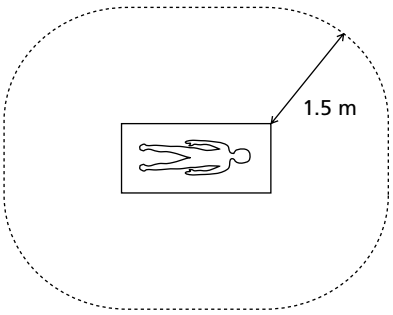
The device may only be used for the authorized *DePuy Synthes Power Tools* batteries.

Before operating the device, check that it is in sound condition and is working properly.

If it is not in perfect working order, contact the *DePuy Synthes Power Tools* representative. Do not use a damaged or faulty device.

Precautions:
- Only use the *DePuy Synthes Power Tools* Universal Battery Charger II (05.001.204) to charge batteries. Using a charger that is not from *DePuy Synthes Power Tools* can damage the battery/power module.
- Do not open device. Risk of fatal injury due to electric shock!
- Do not use the device in the sterile area of the operating room.
- The device must not come into direct or indirect contact with the patient.
- Do not use the device in patient vicinity. The patient vicinity is an area 2.5 m above and 1.5 m next to the patient (see Fig. on the right).
- Do not wash the device in a washer/disinfector. The device must not be sterilized. Please see page 15 for information on cleaning and maintenance.
- Do not operate the device in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide.
- Do not expose the device to direct sunlight or moisture.
- The charging station should always be turned on when a battery is in the charging bay. This ensures availability and prevents discharge.





Scope of delivery
The Universal Battery Charger II consists of the charger (05.001.204), power cord (05.001.140), and four slot covers set (05.001.228). The device may only be used with the supplied power cord.

Storage and transport
All batteries/power modules should be removed for transporting the charger.

Use the original packaging for shipping and transport. If this is no longer available, please contact the *DePuy Synthes Power Tools* representative.

The same environmental conditions apply for transport as for storage, see page 23.

Warranty
The warranty for the device is null and void if the device has not been used properly or the guarantee seal has been damaged. The manufacturer does not accept liability for damage resulting from repairs or maintenance carried out by unauthorized sites. For a complete warranty statement, please contact the *DePuy Synthes Power Tools* Customer Service.

DESCRIPTION OF THE CONTROLS

Front view

1 Charger bays (×4)
2 Symbols for battery type
3 ON/OFF display
4 Control display for each charging bay
5 Ventilation holes

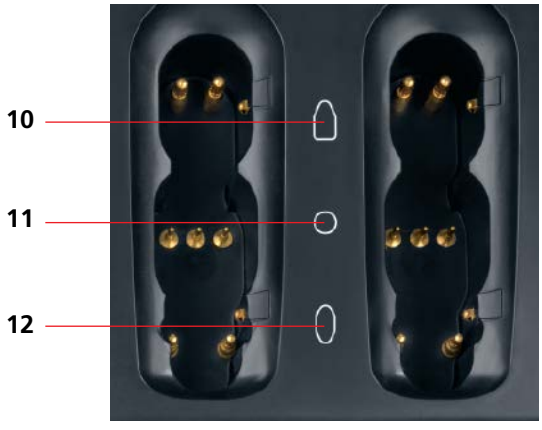
Rear view

6 Ventilation holes
7 ON/OFF power switch
8 Fuses: 2×5 AT / 250 V
9 Power cord connection

Charger bay

The device is fitted with four independent charger bays. Each of these has three slots for the following batteries:

10 Battery Power Line and Battery Power Line II batteries (530.620, 530.630)
11 Trauma Recon System Power Module (05.001.202)
12 SBD and SBD II batteries (532.003, 532.033, 532.103)



OPERATING INSTRUCTIONS
Starting the System

Before starting for the first time, ensure that the power switch is set to O. The device can only be connected to the power supply using the supplied power cord. Set the power switch to **I** to turn the device on (Fig. 1). The ON/OFF display light on the front of the device will illuminate (Fig. 2). If the display flashes, the device must be sent in for repair.

Note: If the red display light ⚠ for a single charger bay lights up (Fig. 3) before the battery is inserted, this charger bay is faulty. In this case, batteries can still be charged in the other charger bays, but it is recommended that the device be sent to the *DePuy Synthes Power Tools* Service Department for repair.

Precautions:

- **Place the device on a non-slip, stable base. Ensure that the ventilation holes in the base of the device are not covered by towels or other objects.**
- **Do not position the device so that it is difficult to separate the power cord from the supply mains.**
- **Do not operate the device in the direct vicinity of radiators or other heat emitting devices, as these can affect the device.**
- **Do not expose the device to direct sunlight or moisture.**
- **Do not cover the side ventilation holes on the device.**
- **Connect only to a power supply with grounding, a rated voltage between 100 V and 240 V and a network frequency range of 50 or 60 Hz.**

Fig. 1

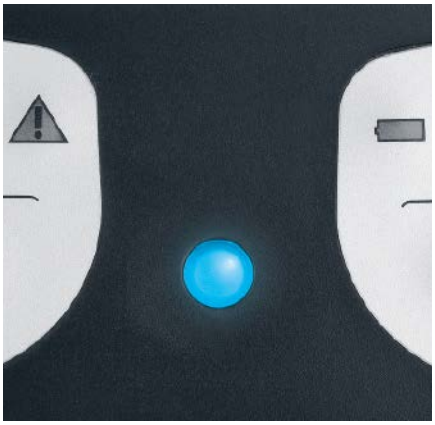


Fig. 2

Fig. 3

CHARGING THE BATTERY/POWER MODULE

Charging the battery
Place the battery to be charged in the proper direction into the corresponding slot of an empty charger bay. Only one battery can be charged in each charger bay at a time.
All charger bays can, however, be used simultaneously with any combination of battery types.

Once the battery types have been identified the charging process starts automatically. This is signalled by the yellow charger display (Fig. 1).

Depending on the charge status and type of battery, it can take from about 15 minutes to around 60 minutes to charge.

Once the battery is fully charged, the green display lights up and the charger switches to maintenance charge (Fig. 2). The battery can be left in the charger. Leave the device switched on to ensure that the battery is always fully charged.

If the battery is removed from the charger before the green display lights up, it will not be fully charged.

Precautions:
- **Insert the battery into the correct slot.**
- **Ensure that the battery is fitted correctly and is identified by the device (yellow charger display lights up).**
- **If the display does not light up after the battery is inserted, remove the battery and insert again or insert into another charger bay.**
- **Do not insert any objects other than batteries into the charger, as the contacts may otherwise be damaged.**

Fig. 1

Fig. 2

Temperature monitoring
The battery and the charger heat up during the charging process. The ventilation holes should therefore not be covered.

If the battery temperature is too high, the yellow charger display starts flashing (Fig. 3). To protect the battery, the device stops charging until the battery has cooled down. Do not remove the battery from the charger if this occurs until the yellow charger display lights up constantly. The charging time will be longer in this case.

Charging new batteries or batteries not recently used
Battery Power Line battery (530.620) or SBD batteries (532.003, 532.033) that have not been used for a long period of time and that have not been stored in an activated charger do not reach their maximum performance for several charging and discharging cycles. In case of doubt, the charger can be used to check the battery status and to refresh the battery (see page 8).

Errors during charging
The following errors may occur while charging a battery:

Yellow display light flashes (Fig. 3)
The battery is too hot and has to cool down before the charging process can be automatically resumed. The battery can be left in the charger.

Red display light ⚠ lights up (Fig. 4)
The battery is faulty and has to be replaced.

No display light
The battery has not engaged in the charging bay or has not been recognized by the device. Remove the battery and insert again or use another charger bay.

Precautions:
- **Do not charge mechanically damaged batteries in the charger.**
- **Only charge batteries authorized for the device (see page 29).**
- **Only use fully charged batteries to avoid delays during surgery.**

Fig. 3

Fig. 4

CHECKING AND REFRESHING BATTERIES/ POWER MODULE

Battery Power Line and SBD batteries
The charger enables Battery Power Line battery (530.620) and SBD batteries (532.003, 532.033) to be refreshed and checked.

It will be indicated if the battery performance is sufficient or if the battery needs to be replaced.

The following factors will affect the battery performance

- Unused, new battery
- Battery not used for a longer period

  In these cases a battery will only reach its maximum performance after several charging and discharging cycles. The check and refresh function ensures that the battery regains its maximum performance again.

- Old battery

  The battery performance declines with age and usage. With the check function it can be seen if the battery performance is sufficient. However, due to the age of the battery it is no longer possible to refresh it.

When required, the check and refresh function is started manually, as outlined below.

After the battery is inserted, the yellow charger display lights up. To refresh and check the battery, press the button with the exclamation mark for at least 2 seconds (Fig. 1) until the yellow display light lights up (Fig. 2). The device then carries out the process. The yellow display lights up throughout this time.

Fig. 1

Fig. 2

Completion of the process is indicated as follows:

- Green display light (Fig. 3): Battery has been successfully refreshed, checked, and charged.
- Red display light (Fig. 4): Either the battery is faulty or performance is insufficient. The battery must be disposed of.

The entire process (refreshing and checking battery status) takes around 10 hours and should only be carried out if there is enough time to do so.

A battery can be charged, checked, or refreshed independently in each charger bay.

Precautions:

- **To recharge batteries normally, do not press the exclamation mark button.**
- **Checking the battery status and refreshing the battery have an impact on the battery. If this is carried out frequently the lifespan of the battery can be affected.**
- **Do not remove the battery from the charger bay as long as the yellow display lights up (Fig. 2 on previous page). Wait until the process has ended and the green or red display lights up. Only then is the battery status clearly assessed.**
- **The process is interrupted if there is a power cut or a switch to the emergency power supply and will then have to be restarted.**

Fig. 3

Fig. 4

Battery Power Line II and SBD II batteries
The charger enables Battery Power Line II and SBD II batteries (530.630, 532.103) to be checked. It will be indicated if the battery performance is sufficient or if the battery needs to be replaced.

Due to the very low self-discharging rate of Lithium-based batteries a refresh function is not required.

When required, the check function is started manually, as outlined below.

After the battery is inserted, the yellow charger display lights up. To check the battery, press the button with the exclamation mark ⓘ for at least 2 seconds (Fig. 5) until the yellow display light lights up (Fig. 6). The device then carries out the process. The yellow display lights up throughout this time.

Fig. 5

Fig. 6

Completion of the process is indicated as follows:
- Green display light (Fig. 7): Battery has been successfully checked and charged.
- Red display light (Fig. 8): Either the battery is faulty or performance is insufficient. The battery must be disposed of.

The entire process (checking battery status) takes around 3 hours and should only be carried out if there is enough time to do so.

A battery can be charged or checked independently in each charger bay.

Precautions:
- **To recharge batteries normally, do not press the exclamation mark button ⓘ.**
- **Checking the battery status has an impact on the battery. If this is carried out frequently the lifespan of the battery can be affected.**
- **Do not remove the battery from the charger bay as long as the yellow display lights up (Fig. 6 on previous page). Wait until the process has ended and the green or red display lights up. Only then is the battery status clearly assessed.**
- **The process is interrupted if there is a power cut or a switch to the emergency power supply and will then have to be restarted.**

Fig. 7

Fig. 8

Trauma Recon System power module
To ensure that the Trauma Recon System (05.001.201, 05.001.240) is operating properly, the Trauma Recon System power module (05.001.202) has to be checked at periodical intervals. It will be indicated if the power module performance is sufficient or if the power module needs to be replaced.

The charger will indicate the necessity, but the user can choose a convenient time to check the power module, as this can take around 4 hours.

When it needs to be checked, the yellow display light flashes (Fig. 9). The check needs to be carried out within the next 3 charging cycles. This is done by pressing the exclamation mark button for at least 2 seconds (Fig. 10). The yellow charger display goes out and the display changes from flashing to lighting up (Fig. 11). If the check is not carried out within the next 3 charging cycles, the device carries out the check automatically.

Completion of the process is indicated as follows:
- Green display light (Fig. 7 on previous page): power module has been checked, charged and is ready to use.
- Red display light (Fig. 8 on previous page): power module has been checked, is not charged and cannot be used; the red service indicator lamp on the power module lights up. Send in the power module for servicing.

A power module can be charged or checked independently in each charger bay.

Precautions:
- **If the check is not carried out within the next 3 charging cycles, the charger starts this process automatically. The yellow display lights up (Fig. 11).**
- **It takes around 4 hours to check the power module.**

Fig. 9

Fig. 10

Fig. 11

STORING BATTERIES

Immediately recharge batteries and the power module after each use.

Any SBD batteries (532.003, 532.033) or Battery Power Line battery (530.620) that are not used should always be stored in the activated charger (maintenance charge). This guarantees that the batteries are always fully charged and ready to use.

Precautions:

- **Do not use batteries/power modules that are not fully charged. A partial charge may not be sufficient for the intended use.**
- **Unusable or faulty batteries/power modules should not be used. They should be disposed of (see section “Disposal” on page 17).**

SLOT COVERS SET

The Slot Covers Set (05.001.228) consists of three plastic elements which were developed to cover the unused slots of the charger (Fig. 1). A Slot Cover helps to insert a battery or power module much easier into the Universal Battery Charger II because it covers the unused slots of the charger (Fig. 2). Therefore, it prevents the insertion of a battery or power module into the wrong slot.

Fig. 1

Fig. 2

CARE AND MAINTENANCE
Cleaning

The device must be unplugged before it is cleaned. Occasionally wipe down the device with a dry cloth. If it is very dirty the device can be cleaned with a slightly damp cloth. Dry well. Do not use solvents.

Whenever it is cleaned the device should be checked to ensure it is working properly and is not damaged.

Maintenance of the device is not required.

If there are any faults, please send the device to the *DePuy Synthes Power Tools* Service Department for repair.

Precautions:

- **Danger of electric shock! Unplug before cleaning.**
- **Do not wash the device in a washer/disinfector.**
- **Device must not be sterilized.**
- **Make sure that no solution enters the device.**
- **If necessary, clean the contacts in the charger bays using the utmost care.**

REPAIR AND TECHNICAL SERVICE

The device should be sent to the *DePuy Synthes Power Tools* Service Department for repair if it is faulty or malfunctions.

The same applies if the ON/OFF display does not light up or flashes when the device is switched on.

To prevent damage during shipping use the original packaging to return devices back to *DePuy Synthes Power Tools*. If this is not possible, please contact the *DePuy Synthes Power Tools* representative.

Users or third parties should not carry out repairs themselves.

Precaution: The manufacturer shall assume no responsibility for damage resulting from unauthorized repair.

DISPOSAL

In most cases faulty chargers can be repaired (see previous section "Repair and Technical Service").

The European directive 2002/96/EC on waste electrical and electronic equipment (WEEE) applies to this device. This device contains materials that should be disposed of in accordance with environment protection requirements. Please observe national and local regulations.

Please send devices that are no longer used to the *DePuy Synthes Power Tools* Service Department. This ensures that they are disposed of in accordance with the national application of the respective directive. The charger may not be disposed of with household waste.

Faulty batteries may not be reused and should be disposed of in an environmentally friendly manner and in accordance with national regulations.

TROUBLESHOOTING

Problem	Possible cause	Solution
ON/OFF display does not light up.	Charger is switched off.	Switch on power switch.
	Power cord is not plugged in.	Connect power cord to the connection on the charger and plug into the wall socket. Then switch on the power switch on the charger.
	Power supply is interrupted (e.g. faulty fuse).	Check power supply. Replace fuse (2 X 5 AT / 250 V) if necessary.
	Charger is faulty.	Send the charger to *DePuy Synthes Power Tools* Service Department for repairs.
ON/OFF display flashes.	Charger is faulty.	Send the charger to *DePuy Synthes Power Tools* Service Department for repairs.
Although the battery/power module is inserted there is no display light for the charger bay.	Battery/power module is not fully inserted.	Ensure that the battery/power module is inserted properly.
	Contacts in the charger bay are dirty.	Carefully clean contacts.
	Battery/power module was not recognized by the charger.	Use another free charger bay.
	Battery/power module is faulty.	Test the battery/power module in another charger bay and dispose of if necessary.
	Charger bay is faulty.	Send the charger to *DePuy Synthes Power Tools* Service Department for repairs.
Red display ⚠ lights up when the battery/power module is inserted.	Battery/power module is faulty.	Replace battery/power module.
	Firmware has to be updated	Check firmware version on the sticker, which is visible on the underside of the charger and compare with the minimum required firmware listed on page 22. Send the charger to *DePuy Synthes Power Tools* Service Department for a software update.

Problem	Possible cause	Solution
Red display ⚠ lights up when the charger is switched on before the batteries/power modules are inserted.	Charger bay is faulty.	Use another free charger bay. Send the charger to the *DePuy Synthes Power Tools* Service Department for repairs.
Yellow display 🔋 flashes during the charging process.	Battery/power module is too hot.	Leave battery/power module inserted in the charger bay. Charger automatically continues the charging process once the battery/power module has cooled down.
Yellow display ⏻ does not light up when the button ⏻ is pressed.	Button was released too soon.	Hold button down for at least 2 seconds.
	Charger bay is faulty.	Select another free charger bay. Send the device to the *DePuy Synthes Power Tools* Service Department for repair.
	Charger has an error.	Switch off charger, then switch back on after 5 seconds. If the ON/OFF display flashes, send the device to the *DePuy Synthes Power Tools* Service Department for repair.
It is not possible to insert the battery/ power module into the slot.	Wrong slot.	Select correct slot and re-insert battery/power module.
	Non-authorized battery/power module.	Check battery/power module type.
	Contacts in the slot bent.	Use another free charger bay. Send the charger to the *DePuy Synthes Power Tools* Service Department for repair.
Charger makes loud noises.	Ventilation holes on the sides, back or base are covered and/or the device is next to a heat source. Automatic cooling is on full power.	Expose ventilation holes and/or ensure that the device is not next to a heat source.

Problem	Possible cause	Solution
Battery/power module performance is low.	Insufficient battery/power module status.	Refresh battery (see page 8). Only possible with Battery Power Line battery (530.620) and SBD batteries (532.003, 532.033).
	Expected battery/power module life is reached.	Test battery/power module (see page 8). If the red display ⚠ lights up, replace battery/power module.
	Battery/power module is not ready for use.	Charge battery/power module until green display ▭ lights up.
	Power tool or attachment is sluggish, i.e. as a result of insufficient maintenance.	Send power tool and attachments to *DePuy Synthes Power Tools* Service Department for repair.
Battery/power module is visibly damaged.	Battery/power module was exposed to excessive heat.	Replace battery/power module.
	Battery/power module was washed, disinfected or sterilized.	Replace battery/power module.
	Battery/power module was short-fused by metal objects.	Replace battery/power module.
	Battery/power module fell on the floor.	Replace battery/power module.

Please also observe the instructions for use of the corresponding power tools.

If the recommended solutions do not work, please contact your *DePuy Synthes Power Tools* representative.

SYSTEM SPECIFICATIONS

Device Specifications

Dimensions (L × B × H)	310 mm × 220 mm × 175 mm
Weight	4.8 kg
Operating voltage	100 V – 240 V, 50/60 Hz
Operating current	1.2–2.8 A AC
Mains rated input	250 W
Protection class	I, EN/IEC 60601-1 (2005+Corr:07)
Protection type by casing	IPX0, EN/IEC 60601-1 (2005+Corr:07)
Fuses	2 × 5 AT / 250 V
Operating mode	Continuous operating mode
Sterilization	Device must not be sterilized

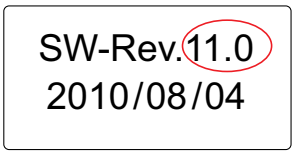
Subject to technical modifications

Minimum Required Firmware Version of UBC II

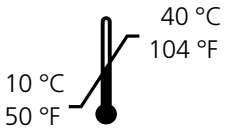
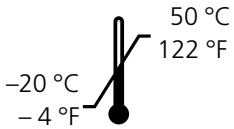
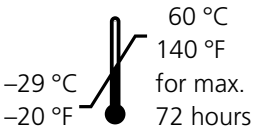
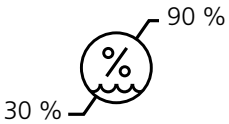
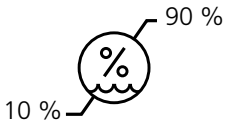
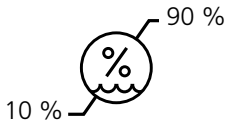
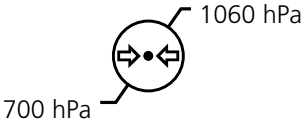
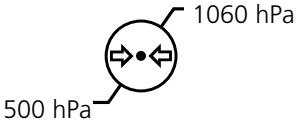
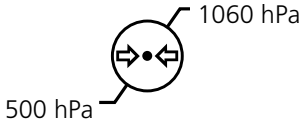
In order that the different battery types can be recognized and charged by UBC II the correct Firmware version is required. The table below outlines the requirements for each battery type. If required, send the charger to the *DePuy Synthes Power Tools* Service Department for a firmware update.

System	Battery/power module	Minimum required Firmware version of UBC II
Battery Power Line	530.620 (14.4 V, NiMH)	2.0 (no sticker on the underside of the charger)
Trauma Recon System	05.001.202 (25.2 V, Li-Ion)	2.0 (no sticker on the underside of the charger)
Small Battery Drive	532.003 (12 V, NiCd)	2.0 (no sticker on the underside of the charger)
	532.033 (14.4 V, NiCd)	2.0 (no sticker on the underside of the charger)
Small Battery Drive II	532.103 (14.4 V, Li-Ion)	11.0 (sticker visible on the underside of the charger*)
Battery Power Line II	530.630 (14.8 V, Li-Ion)	14.0 (sticker visible on the underside of the charger*)

*Sticker as shown on the underside of the charger with Firmware version 11.0



Environmental Conditions

	Operation	**Storage**	**Transport**
Temperature			
Relative humidity			
Atmospheric pressure			
Altitude	0 – 3000 m	0 – 5000 m	–

Precaution: The device is not suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide.

Applicable Standards

The device meets the following standards:

EN/IEC 60601-1 2nd Edition

Universal Battery Charger II
With respect to electrical shock, fire, and mechanical hazards only in accordance with
UL 60601-1/CAN/CSA C22.2 No. 601.1

IEC 60601-1-2
IEC 60601-1-4

EN/IEC 60601-1 3rd Edition

Universal Battery Charger II
With respect to electrical shock, fire, and mechanical hazards only in accordance with
ANSI/AAMI ES60601-1 (2005+C1+A2)
CSA C22.2 No 60601.1 (2008)
EN/IEC 60601-1 (2005+Corr:07)

ELECTROMAGNETIC COMPATIBILITY

Accompanying Documents in Accordance with EN/IEC 60601-1-2, Clause 5.2.2

Table 1: Emissions

Guidelines and manufacturer's declaration – electromagnetic emissions

The *DePuy Synthes Power Tools* Universal Battery Charger II is intended for use in the electromagnetic environment specified below. The customer or the user of the *DePuy Synthes Power Tools* Universal Battery Charger II should assure that it is used in such an environment.

Emission tests	**Compliance**	**Electromagnetic environment – guidance**
RF emissions CISPR 11	Group 1	The *DePuy Synthes Power Tools* Universal Battery Charger II uses RF energy only for its internal function. Therefore, its RF emission is very low and it is not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The *DePuy Synthes Power Tools* Universal Battery Charger II is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Table 2: Immunity (all devices)

Guidelines and manufacturer's declaration – electromagnetic immunity

The *DePuy Synthes Power Tools* Universal Battery Charger II is intended for use in the electromagnetic environment specified below. The customer or the user of the *DePuy Synthes Power Tools* Universal Battery Charger II should assure that it is used in such an environment.

Immunity test standard	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±8 kV contact ±8 kV air	Floors should be wood, concrete, or ceramic tile. If the floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for signal lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line to line ±2 kV line to earth	±1 kV line to line ±2 kV line to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11	<5 % U_T (0.5 cycle) 40 % U_T (5 cycles) 70 % U_T (25 cycles) <5 % U_T for 5 s	<5 % U_T (0.5 cycle) 40 % U_T (5 cycles) 70 % U_T (25 cycles) <5 % U_T for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the *DePuy Synthes Power Tools* Universal Battery Charger II requires continued operation during power mains interruptions, it is recommended that the *DePuy Synthes Power Tools* Universal Battery Charger II is powered from a UPS.
Note: U_T is the A.C. mains voltage prior to application of the test level.			
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Table 4: Immunity (not life-supporting devices)

Guidance and manufacturer's declaration – electromagnetic immunity

The *DePuy Synthes Power Tools* Universal Battery Charger II is intended for use in the electromagnetic environment specified below. The customer or the user of the *DePuy Synthes Power Tools* Universal Battery Charger II should assure that it is used in such an environment.

Electromagnetic environment – guidance

Portable and mobile RF communications equipment should be used no closer to any part of the *DePuy Synthes Power Tools* Universal Battery Charger II, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

Immunity test standard	**IEC 60601 test level**	**Compliance level**	**Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	V1 = 10 Vrms 150 kHz to 80 MHz	$d = 0.35\sqrt{P}$ 150 kHz to 80 MHz
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 800 MHz	E1 = 10 V/m 80 MHz to 800 MHz	$d = 0.35\sqrt{P}$ 80 MHz to 800 MHz
Radiated RF IEC 61000-4-3	3 V/m 800 MHz to 2.5 GHz	E2 = 7 V/m 800 MHz to 2.7 GHz	$d = \sqrt{P}$ 800 MHz to 2.7 GHz

where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).

Field strengths from fixed RF transmitters as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b]

Interference may occur in the vicinity of equipment marked with the following symbol:

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Synthes Universal Battery Charger II is used exceeds the applicable RF compliance level above, the Synthes Universal Battery Charger II should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Synthes Universal Battery Charger II.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

Table 6: Recommended separation distances (not life-supporting devices)

Recommended separation distances between portable and mobile RF communications equipment and the Synthes Universal Battery Charger II

The *DePuy Synthes Power Tools* Universal Battery Charger II is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the *DePuy Synthes Power Tools* Universal Battery Charger II can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the *DePuy Synthes Power Tools* Universal Battery Charger II as recommended below, according to the maximum output power of the communication equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter** m		
	150 kHz to 80 MHz $d = 0.35 \sqrt{P}$	80 MHz to 800 MHz $d = 0.35 \sqrt{P}$	800 MHz to 2700 MHz $d = \sqrt{P}$
0.01	3.5 cm	3.5 cm	10 cm
0.1	11 cm	11 cm	32 cm
1	35 cm	35 cm	1 m
10	1.1 m	1.1 m	3.2 m
100	3.5 m	3.5 m	10 m

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

BATTERIES/POWER MODULES COMPATIBLE WITH UNIVERSAL BATTERY CHARGER II

Battery for Battery Power Line

Product number	530.620
Operating voltage (rated)	14.4 V
Battery capacity	2 Ah / 28.8 Wh
Battery	NiMH
Typical charging time	<60 min

Battery for Battery Power Line II

Product number	530.630
Operating voltage (rated)	14.8 V
Battery capacity	1.5 Ah / 22.2 Wh
Battery	Li-Ion
Typical charging time	<60 min

Power Module for Trauma Recon System

Product number	05.001.202
Operating voltage (rated)	25.2 V
Battery capacity	1.2 Ah / 30.24 Wh
Battery	Li-Ion
Typical charging time	<60 min

Batteries for Small Battery Drive

Product number	532.003
Operating voltage (rated)	12 V
Battery capacity	0.5 Ah / 6 Wh
Battery	NiCd
Typical charging time	<60 min

Product number	532.033
Operating voltage (rated)	14.4 V
Battery capacity	0.5 Ah / 7.2 Wh
Battery	NiCd
Typical charging time	<60 min

Battery for Small Battery Drive II

Product number	532.103
Operating voltage (rated)	14.4 V
Battery capacity	1.2 Ah / 17.28 Wh
Battery	Li-Ion
Typical charging time	<60 min

Precaution: The battery for the Power Drive (530.200) cannot be charged with the UBC II. Please use the UBC item number 530.601.

EXPLANATION OF SYMBOLS USED

Symbols for Operating the Charger

Battery is charged. The charger has switched to maintenance charge and checks that the battery is always fully charged and ready to use.

Lighting display: the battery is partially charged. The charging process is not completed.
Flashing display: the battery is too hot (see page 7).

The battery is faulty and has to be replaced (see page 7) or the charger bay is faulty (see page 5).

Button to check and refresh batteries (see page 8) and to check Battery Power Line II, SBD II batteries, or power modules (see page 10).

Lighting display: the process to check and refresh batteries (see page 8) and to check Battery Power Line II, SBD II batteries, or power modules (see page 10) is ongoing.
Flashing display: the inserted Trauma Recon System power module should be checked (see page 12).

Symbol for Battery Power Line and Battery Power Line II batteries (530.620, 530.630)

Symbol for Trauma Recon System power module (05.001.202)

Symbol for SBD and SBD II batteries (532.003, 532.033, 532.103)

Symbols on the Charger

Read the provided instructions for use before operating the device.

Caution

The European directive 2002/96/EC on waste electrical and electronic equipment (WEEE) applies to this device. This device contains materials that should be disposed of in accordance with environment protection requirements. Please observe national and local regulations.
See section entitled “Disposal” on page 17.

Date of manufacture

Universal Battery Charger II
With respect to electrical shock, fire, and mechanical hazards only in accordance with UL 60601-1/CAN/CSA C22.2 No. 601.1

Universal Battery Charger II
With respect to electrical shock, fire, and mechanical hazards only in accordance with
ANSI/AAMI ES60601-1 (2005+C1+A2)
CSA C22.2 No 60601.1 (2008)
EN/IEC 60601-1 (2005+Corr:07)

The device meets the requirements of directive 93/42/EEC for medical devices. It is authorized by an independent named site for which it bears the CE symbol.

SW-Rev.11.0
2010/08/04

Firmware version of UBCII
(see page 22)

2x5AT/250V
breaking capacity
capacité de rupture
150A/250V

Fuses: 2 × 5 AT / 250 V

non sterile

Nonsterile

Temperature
(see page 23)

Relative humidity
(see page 23)

Atmospheric pressure
(see page 23)

Do not use
if package is damaged

ORDERING INFORMATION

Battery charger

05.001.204	Universal Battery Charger II

Batteries

530.620	Battery for Battery Power Line, 14.4 V
530.630	Battery for Battery Power Line II, 14.8 V
05.001.202	Power Module for Trauma Recon System 25.2 V
532.003	Battery for SBD/SBD II, 12 V, standard
532.033	Battery for SBD/SBD II, 14.4 V
532.103	Battery for SBD/SBD II, 14.4 V

Power cord

05.001.140	Power Cord, three-pole, North America

Slot Covers Set

05.001.228	Slot Covers Set for Universal Battery Charger II

Limited Warranty and Disclaimer: Products are sold with a limited warranty to the original purchaser against defects in workmanship and materials. Any other express or implied warranties, including warranties of merchantability or fitness, are hereby disclaimed. Please contact Customer Service for full Warranty statement.

WARNING: in the USA, this product has labeling limitations. See package insert for complete information.

CAUTION: USA Law restricts these devices to sale by or on the order of a physician.
To order in the US, call DePuy Synthes Power Tools Customer Service: (800) 327-6887.

Not all products are currently available in all markets.

Synthes USA
1302 Wrights Lane East
West Chester, PA 19380
USA
Tel: (610) 719-5000
To Order: (800) 327-6887
Fax: (800) 327-6661
Email: infoPowerTools@DPYUS.jnj.com

Synthes (Canada) Ltd.
2566 Meadowpine Boulevard
Mississauga, Ontario L5N 6P9
Telephone: (905) 567-0440
To order: (800) 668-1119
Fax: (905) 567-3185

www.depuysynthes.com

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